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	Application No.	**Applicant(s)**
Notice of Allowability	09/388,804	MOORE, PETE N.
	Examiner	**Art Unit**	
	Anh-Vu H. Ly	2667	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *amendment filed May 31, 2005*.

2. ☒ The allowed claim(s) is/are *1, 3-6, 9-12, 14-17, and 20-23 renumbered as 1-17*.

3. ☐ The drawings filed on _____ are accepted by the Examiner.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some*   c) ☐ None of the:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

        3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

6. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☒ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

        1) ☐ hereto or 2) ☒ to Paper No./Mail Date *2*.

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

    Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application (PTO-152)

6. ☒ Interview Summary (PTO-413), Paper No./Mail Date *8/3/05* .

7. ☒ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

DETAILED ACTION

EXAMINER'S AMENDMENT

1.   An examiner's amendment to the record appears below. Should the changes and/or

additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR

1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the

payment of the issue fee.

      Authorization for this examiner's amendment was given in a telephone interview with

James Henry on August 2, 2005.

      The application has been amended as follows:

In The Claims

1.   (Currently Amended) A method[,] comprising:

      switching data traffic having packets of data of a plurality of sizes between a first number

of local area network (LAN) ports and a second number of wide area networks (WAN) links of a

router resource;

      assigning a portion of the second number of WAN links to one of the first number of

LAN ports;

      determining a bandwidth availability for the one of the first number of LAN ports from

the bandwidth availability of the assigned portion of the second number of WAN links; ~~and~~

      throttling back the one of the first number of LAN ports to control utilization of the router

resource at an entry point to the router resource according to the bandwidth availability of the

assigned portion of the second number of WAN links and according to an assigned portion of an

overall global switching capacity of the router ~~resource.~~ resource; and

permitting individual ones of the LAN ports to exceed their fair share of the switching

capacity of the router resource if a current switching load due to traffic from all of the LAN ports

is less than a maximum switching capacity for the router resource.

2.   (Cancelled).

5.   (Currently Amended) A method[,] comprising:

switching data traffic having packets of data of a plurality of sizes between a first number

of local area network (LAN) ports and a second number of wide area networks (WAN) links of a

router resource;

assigning a portion of the second number of WAN links to one of the first number of

LAN ports;

determining a bandwidth availability for the one of the first number of LAN ports from

the bandwidth availability of the assigned portion of the second number of WAN links; and

determining, at an entry point for the one of the first number of LAN ports of the router

resource, whether or not to admit inbound traffic according to a fair allocation distribution

scheme that allows traffic to be admitted according to the bandwidth availability for the one of

the first number of LAN ports and according to an assigned portion of total switching capacity of

the router resource and a current utilization of total switching capacity of the router resource.

resource, wherein the fair allocation scheme allows traffic to be admitted even if the exit port of

the router resource associated with the traffic is exceeding an allocated amount of the total

switching capacity of the router resource so long as the total switching capacity of the router

resource has not been attained.

7.   (Cancelled).

8.   (Cancelled).

9.   (Currently Amended) A routing resource comprising:

means for switching data traffic having packets of data of a plurality of sizes between a

first number of local area network (LAN) ports and a second number of wide area networks

(WAN) links of a router resource;

means for assigning a portion of the second number of WAN links to one of the first

number of LAN ports;

means for determining a bandwidth availability for the one of the first number of LAN·

ports from the bandwidth availability of the assigned portion of the second number of WAN

links; and

means for providing fair allocation of bandwidth availability and of switching capacity at

an entry point to the router resource among the first number of LAN ports, the routing resource

switching packets of data having a plurality of sizes, the fair allocation of bandwidth availability

being provided according to output bandwidth capacity of the assigned portion of the second

number of WAN links and the fair allocation of switching capacity being provided according to

an assigned portion of a total switching capacity utilization of the router ~~resource.~~ resource,

wherein, the fair allocation scheme allows traffic to be admitted even if the exit port of the router

resource associated with the traffic is exceeding an allocated amount of the total switching

capacity of the router resource so long as the total switching capacity of the router resource has

not been attained.

12.   (Currently Amended) A router comprising:

means for communicatively coupling a first number of local area network (LAN) ports

with a second number of wide area networks (WAN) links;

means for switching packets of data having a plurality of sizes;

means for assigning a portion of the second number of WAN links to one of the first

number of LAN ports;

means for determining a bandwidth availability for the one of the first number of LAN

ports from the bandwidth availability of the assigned portion of the second number of WAN

links; and

means for controlling the utilization of bandwidth availability of the one of the first

number of LAN ports at an entry point to the router resource according to the determined

bandwidth availability for the one of the first number of LAN ports and according to an assigned

portion of an overall global switching capacity of the router resource. resource; and

means for permitting individual ones of the LAN ports to exceed their fair share of the

switching capacity of a current switching load due to traffic from all of the LAN ports is less

than a maximum switching capacity for the router.

13.   (Cancelled).

16.   (Currently Amended) Computer-readable medium having a sequence of instructions, the

sequences of instructions, when executed by a processor, causing the processor to perform a

method comprising:

        switching data traffic having packets of data of a plurality of sizes between a first number

of local area network (LAN) ports and a second number of wide area networks (WAN) links of a

router resource;

        assigning a portion of the second number of WAN links to one of the first number of

LAN ports;

        determining a bandwidth availability for the one of the first number of LAN ports from

the bandwidth availability of the assigned portion of the second number of WAN links; and

        determining, at an entry point for the one of the first number of LAN ports of the router

resource, whether or not to admit inbound traffic according to a fair allocation distribution

scheme that allows traffic to be admitted according to the bandwidth availability for the one of

the first number of LAN ports and according to an assigned portion of total switching capacity of

the router resource and a current utilization of total switching capacity of the router ~~resource.~~

resource, wherein the fair allocation scheme allows traffic to be admitted even if the exit port of

the router resource associated with the traffic is exceeding an allocated amount of the total

switching capacity of the router resource so long as the total switching capacity of the router

resource has not been attained.

18.   (Cancelled).

19.   (Cancelled).

Allowable Subject Matter

2.   Claims 1, 3-6, 9-12, 14-17, and 20-23 are allowed.

The following is an examiner's statement of reasons for allowance:

The prior art does not teach or fairly suggest throttling back the one of the first number of

LAN ports to control utilization of the router resource at an entry point to the router resource

according to the bandwidth availability of the assigned portion of the second number of WAN

links and according to an assigned portion of an overall global switching capacity of the router

resource; and permitting individual ones of the LAN ports to exceed their fair share of the

switching capacity of the router resource if a current switching load due to traffic from all of the

LAN ports is less than a maximum switching capacity for the router resource, as specified in

independent claim 1.

The prior art does not teach or fairly suggest determining, at an entry point for the one of

the first number of LAN ports of the router resource, whether or not to admit inbound traffic

according to a fair allocation distribution scheme that allows traffic to be admitted according to

the bandwidth availability for the one of the first number of LAN ports and according to an

assigned portion of total switching capacity of the router resource and a current utilization of

total switching capacity of the router resource, wherein the fair allocation scheme allows traffic

to be admitted even if the exit port of the router resource associated with the traffic is exceeding

an allocated amount of the total switching capacity of the router resource so long as the total

switching capacity of the router resource has not been attained, as specified in independent

claims 5 and 16.

The prior art does not teach or fairly suggest means for providing fair allocation of

bandwidth availability and of switching capacity at an entry point to the router resource among

the first number of LAN ports, the routing resource switching packets of data having a plurality

of sizes, the fair allocation of bandwidth availability being provided according to output

bandwidth capacity of the assigned portion of the second number of WAN links and the fair

allocation of switching capacity being provided according to an assigned portion of a total

switching capacity utilization of the router resource, wherein, the fair allocation scheme allows

traffic to be admitted even if the exit port of the router resource associated with the traffic is

exceeding an allocated amount of the total switching capacity of the router resource so long as

the total switching capacity of the router resource has not been attained, as specified in

independent claim 9.

The prior art does not teach or fairly suggest means for controlling the utilization of

bandwidth availability of the one of the first number of LAN ports at an entry point to the router

resource according to the determined bandwidth availability for the one of the first number of

LAN ports and according to an assigned portion of an overall global switching capacity of the

router resource; and means for permitting individual ones of the LAN ports to exceed their fair

share of the switching capacity of a current switching load due to traffic from all of the LAN

ports is less than a maximum switching capacity for the router, as specified in independent claim

12.

Any comments considered necessary by applicant must be submitted no later than the

payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for

Allowance."

Conclusion

3.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

Chong et al (US Patent NO. 5,983,278) discloses low-loss, fair bandwidth allocation flow

control in a packet switch.

McConnell et al (US Patent No. 6,108,307) discloses frame relay priority queues to offer

multiple service classes.

Kalkunte et al (US Patent No. 6,108,306) discloses apparatus and method in a network

switch for dynamically allocating bandwidth in Ethernet workgroup switches.

Grosser, Jr. et al (US Patent No. 6,202,094 B1) discloses adding links simultaneously to a

multilink bundle using bandwidth allocation protocol.

Maurya (US Patent No. 6,160,808) discloses technique for transmitting incoming multi-

link PPP traffic over multiple outing links in a multi-link bundle.

Davison (US Pub 2003/0048778 A1) discloses method and apparatus for arranging and

adjusting a bundle in an ATM network.

Lauck et al (US Patent NO. 6,615,271 B1) discloses traffic control system having

distributed rate calculation and link flow control.

4.   Any inquiry concerning this communication or earlier communications from the
examiner should be directed to Anh-Vu H. Ly whose telephone number is 571-272-3175. The
examiner can normally be reached on Monday-Friday 7:00am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, Chi Pham can be reached on 571-272-3179. The fax phone number for the
organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent
Application Information Retrieval (PAIR) system. Status information for published applications
may be obtained from either Private PAIR or Public PAIR. Status information for unpublished
applications is available through Private PAIR only. For more information about the PAIR
system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR
system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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8/3/05